

DOCKET FILE COPY ORIGINAL

Before the  
Federal Communications Commission  
Washington, DC 20554

In the Matter of )  
 )  
Amendment of Part 2 of the ) ET Docket  
Commission's Rules to Allocate the ) No. 97-884  
455-5-456 Mhz, and 459-460 Mhz bands ) FCC 97-363  
to the Mobile-Satellite Service )

Comments of Thomas C. Smith

I would like to express my concerns and raise some questions concerning the proposed allocation of the 455-456 mhz band for the shared use of broadcast auxiliary service and the Mobile Satellite Service (Little LEO's) on a co-primary basis between the two services.

This action will affect 25,000 licenses with many of these licenses covering a number of transmitters. This band also makes up nearly 50 percent of the bandwidth available to broadcasters for use for radio remote program pickup and cuing proposes for both radio and television.

My first concern is in the Commission's proposed use of technology in protecting broadcast auxiliary stations from interference by the new mobile satellite service. From comments in the notice of proposed rule making, the Commission seems to have doubts about the technology to prevent interference. In the second paragraph of section B, Allocations, the FCC stated, Notwithstanding that the WRC-95 Preparatory Docket concluded that these bands MAY have the potential capacity for sharing with little Leo uplinks without creating an unacceptable impact on incumbent operations ". In the next paragraph, the Commission in

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asking for comment on spectrum sharing stated " Little Leo systems MAY be able to search the spectrum for unused channels and accomplished their communications without hindering incumbent use ". Because of the use of MAY in these statements and the fact that satellites in the mobile satellite service require complex technology to coordinate the hand off of messages from satellite to satellite as they cross the sky, adding a second complex technology to avoid interference may make it very difficult to completely avoid interference.

My second concern is the Commission's assumption that the usage of the Mobile Satellite Service would consist of transmissions that are of intermittent and brief nature. I also question the Commission's assumption that because broadcast remote pickup frequencies are not in nearly constant use, there is space available for use for Mobile Satellite service. Usage of broadcast auxiliary frequencies vary greatly based on the number of stations in the market and the number of events going on. The level of usage varies on the time of year, week, or even time of day. Election cycles and sporting events have a big influence on the usage of broadcast auxiliary frequencies. Chances are that the demands for spectrum for both services will peak at the same times.

Some examples of high usage periods would include time of day periods such as morning and afternoon drive times, when radio broadcasters are doing traffic remotes and both

radio and TV stations are doing live newscasts. Mobile satellite service's could also be carrying a large amount of traffic including traffic control and radiolocation services. Little Leo's could also be carrying beginning and end of the day business information.

High profile events such as sporting events, disaster coverage and major festivals increase the usage of broadcast auxiliary frequencies. Special events such as the Olympics and the national politico conventions have operated under special rules from the FCC to handle the spectrum congestion. Coverage of news events that receive major national coverage ( TWA 800 crash, OJ trial, etc ) also place large demands on broadcast auxiliary frequencies. The heavy usage of 455-456 mhz spectrum by broadcasters during this periods could preclude the use of this spectrum by mobile satellite service. Demand for mobile satellite services could also increase during this time causing conflict between the services.

The Commission, in it's notice questioned the issue of spectrum sharing in two different sections. In section C, paragraph 2, the Commission noted that conclusion from the WRC-95 working group was based on theoretical assumptions such as low traffic levels of mobile incumbent usage and on certain engineering techniques that have been used in lightly bands. What will happen as broadcasters expand their use of this spectrum with increase news and sport operations. One only needs to look at the growth

of news and sport operations in the last 10 to 15 years. Mobile satellite service is bound to grow as new uses for data transmission in this service grows. Will the 450 millisecond data bursts increase in number or length till they become nearly continuous.

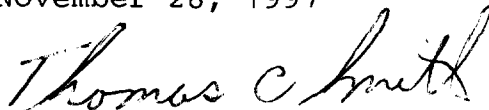
Another potential interference problem is the use of low gain antennas in both the broadcast and MSS services. Because of the mobile nature of both these services and the wide beamwidth of the antennas, there is a high chance of unintentional interference between services. Many broadcast stations use antennas placed high on their towers to provide good coverage in picking up remote programming and to communicate with their remote and news crews for cueing proposes. Because little LEO's operate at low orbit, as these satellites come over the horizon, these antennas would also have the potential to receive signals from a Little LEO or interfere with a Little LEO when transmitting.

The Mobile Satellite Service has the potential to provide many new services, but the demands on broadcasters due to increased competition also require access to all the spectrum that is allocated to it. With the doubts raised by the Commission itself by questioning the possible use of the spectrum and the technology in preventing interference between the two services, I believe the Commission should not allocate this spectrum to the Mobile Satellite Service at this time. There are too many maybe's in this notice concerning usage and possible technology

to give any user's confidence that interference will not exist between the two services. The Commission should wait till it has further knowledge about spectrum usage and there is further development and experience with the technology. The Commission should not make any final allocation of the 455-456 mhz spectrum until it has issued more information on it's plans and methods, in a further notice of rule making. If this plan would not work out, it would be broadcasters who would have to move to new spectrum as it would be difficult to modify the satellites once they are launched.

The opinions expressed are solely my own and do not represent any others viewpoint I have 28 years experience as a broadcast technician and am active in the Society of Broadcast Engineers broadcast auxiliary coordination project.

Respectfully Submitted  
November 28, 1997

A handwritten signature in cursive script that reads "Thomas C. Smith". The signature is written in dark ink and is positioned below the typed name and address.

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